

June 9, 2003

MEMORANDUM FOR: John Williams  
Acting Project Director, Survey Section B

Gary Means  
NGS Project Coordinator

Professor Boudewijn H.W. van Gelder  
State Project Coordinator

FROM: Charles W. Challstrom  
Director, National Geodetic Survey

SUBJECT: PROJECT INSTRUCTIONS:  
Indiana Federal Base Network Survey

The efforts of the Office of the Indiana State Geodetic Advisor ([OISGA](#)) and the Indiana surveying community to observe the [Indiana Federal Base Network \(FBN\)](#) are gratefully acknowledged. These voluntary contributions of state and local resources allow for the timely completion of the nationwide FBN network, provide opportunities for the transfer of survey technologies, and tailor the network to meet local needs.

To accomplish this task, please proceed in accordance with “[Standing Instructions: State-Sponsored FBN Surveys](#)” dated April 30, 2003. Use the following project identifiers as appropriate:

Title:	Indiana FBN, 2003
Accession number:	GPS-1850
Task Number:	A8K6D20P00 (FBN)

It is not required to collect meteorological data. However, collection of met data is encouraged if appropriate meteorological instruments are readily available; NGS does not recommend buying meteorological instruments solely for this purpose. The data may be useful during the analysis phase, particularly when atmospheric conditions are abnormal or highly variant. It may be possible to avoid reobservations through re-processing with observed meteorological data.

A proposed station list, map, and list of project deliverables are attached.

Attachment

N/NGS21:JGEvjen:713-3194:amg:6-2-03  
C:\MYFILES\INSTRUCTIONS\IN-GPS1850

### STATE DELIVERABLES

STATE PROJECT COORDINATOR = Prof. Boudewijn H.W. van Gelder, School of Civil Engineering  
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FILE TYPE	SOFTWARE	FILE NAME	DESCRIPTION	STATUS
B-file (observation metadata)	<a href="#">CR8BB</a> v.5.5.2 <a href="#">GEOID99</a>	IN_FBN.bfl	Input observation data from observation logs. Add modeled geoid heights.	
D-file (station descriptions)	<a href="#">WDDPROC</a> v.4.xx	IN_FBN.dsc	Input station data from description logs.	
R-files (raw GPS data)	receiver software receiver or <a href="#">TEQC</a>	4444DDDS.XXX 4444DDDS.03n,4444DDDS.03 o	Raw GPS observables in receiver-dependent format. Convert files to Receiver-INdependent EXchange (RINEX) format.	
Survey Forms	For each station: may include <a href="#">GPS observation logs</a> , <a href="#">pencil rubbings</a> , <a href="#">description log</a> , <a href="#">visibility diagram</a> , as necessary.			
Photographs	Photos & formats described in “ <a href="#">Requirements for Digital Photographs of Survey Marks &amp; CORS Antennas</a> ”			
Field Project Report	A <a href="#">sample report</a> format is available.			

Detailed descriptions of project deliverables can be found in the [FGCS Bluebook Annex L](#)

### NGS DELIVERABLES

NGS PROJECT COORDINATOR = Gary Means, National Geodetic Survey  
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FILE TYPE	SOFTWARE	FILE NAME	DESCRIPTION	STATUS
GPS precise orbit files	<a href="#">IGS website</a>	igsWWWWD.sp3	Precise ephemerides for GPS satellites in SP3 format.	
A-file (adjust configuration)	<a href="#">QQRECORD</a> v.1.4	IN_FBN.afl	Modify A-file by adding QQ records from G-file.	
G-file (computed baselines)	<a href="#">PAGES</a> v.2002.01.28	IN_FBN.gfl	Compute baselines from RINEX2 GPS data and orbit files.	
Free adjustment Constrained adjustment	<a href="#">ADJUST</a> v.4.26	IN_FBN.free.adjust IN_FBN.cors.adjust	Compute ITRF positions from A-file, B-file, & G-file. Constrain ellipsoidal heights and CORS positions. Include UNIX “plotres_prompt.bsh” plots.	
Various DQA program outputs	includes <a href="#">COMPGB</a> , OBSDES, NEWCHKOB, OBSCHK, <a href="#">WCHKDESC</a> , etc. Explain any error messages encountered.			
Project & Processing Reports	miscellaneous	IN_FBN.wpd	See <a href="#">FGCS Bluebook Annex K</a> for details.	